

Centerpulse Orthopedics Ltd.

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Claims

- 5 1. An apparatus for the fixing of the position of bone cuts for the inser-
tion of knee implants, comprising at least one cutting jig (11) which
can be coupled to a base element (15) fixed to the bone in the region
of a condyle and can be fixed to the base element (15), wherein the
cutting jig (11) defines, in the fixed state and in each case by means
10 of a slot (17, 19) for a cutting tool (21, 23), a first cutting plane (25)
with respect to the base element (15) and a second cutting plane
(27) with respect to the first cutting plane (25), and wherein the ori-
entation of the second cutting plane (27) is adjustable relative to the
first cutting plane (25) when the cutting jig (11) is coupled to the
15 base element (15) and while taking the respective knee anatomy into
account.
2. An apparatus in accordance with claim 1, characterized in that the
first cutting plane (25) and the second cutting plane (27) extend
20 perpendicular to one another.
3. An apparatus in accordance with claim 1, characterized in that the
orientation of the second cutting plane (27) is adjustable with the
cutting jig (11) movable relative to the base element (15), with the
25 cutting jig (11) preferably being movable only parallel to the first
cutting plane (25) and in particular only in a straight line.

4. An apparatus in accordance with claim 1, characterized in that the cutting jig (11) is compulsorily guided at the base element (15) by a guide groove formed at the base element (15).
- 5 5. An apparatus in accordance with claim 1, characterized in that the cutting jig (11) has at least one guide (29) for an abutment element (31) which, in at least one of the cutting planes (25, 27), forms an abutment for the cutting tool (21, 23) restricting the respective cut.
- 10 6. An apparatus in accordance with claim 5, characterized in that the guide (29) can be made such that the abutment element (31) lies on the line of intersection (33) of the two cutting planes (25, 27).
- 15 7. An apparatus in accordance with claim 5, characterized in that the guide (29) for the abutment element (31) is compulsorily coupled to the slot (19) defining the second cutting plane (27).
- 20 8. An apparatus in accordance with claim 5, characterized in that the guide (29) includes a passage formed in the cutting jig (11) through which the abutment element (31) can be inserted.
- 25 9. An apparatus in accordance with claim 5, characterized in that the abutment element (31) is provided in the form of an abutment pin which can be introduced into the bone (13) before the carrying out of the bone cuts.
10. An apparatus in accordance with claim 1, characterized in that an adjustable probe device (81) is provided to take the knee anatomy

into account and can be compulsorily coupled to the slot (19) of the cutting jig (11) defining the second cutting plane (23), with it being possible to set a plurality of pre-determined implant sizes by adjusting a probe (83) relative to a base part (85) coupled to the slot (19).

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11. An apparatus in accordance with claim 1, characterized in that the slot (17) defining the first cutting plane (25) is formed by an intermediate space present between the upper side of the base element (15) and a side of the cutting jig (11) facing the base element (15) when the cutting jig (11) is coupled to the base element (15).
12. An apparatus in accordance with claim 1, characterized in that the cutting jig (11) includes a turntable arrangement (37) with a turntable (39) which is rotatably supported at the cutting jig (11) and with which a guide section (41) is rotatably fixedly connected in which the slot (19) defining the second cutting plane (27) is formed, wherein the rotational axis of the turntable (39) preferably extends perpendicular to the first cutting plane (21).
13. An apparatus in accordance with claim 12, characterized in that a further guide section (43) is rotatably fixedly connected to the turntable (39) and is formed as a guide (29) for the abutment element (31).
14. An apparatus in accordance with claim 1, characterized in that the cutting jig (11) furthermore has a clamping device with an actuating member (45) by means of which the cutting jig (11) can be fixed relative to the base element (15) and simultaneously the orientation of

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the second cutting plane (27) can be fixed relative to the first cutting plane (25).

- 5 15. An apparatus in accordance with claim 1, characterized in that the cutting jig (11) includes a U-shaped base part (47) which can be pushed onto the base element (15) and having U-limbs (49, 51) extending parallel to the first cutting plane (25), a clamping lever (53) pivotably supported at the base part (47) about an axis extending parallel to the first cutting plane (25) and perpendicular to the U
- 10 limbs (49, 51) of the base part (47) and a clamping spindle (45) extending parallel to the U limbs (49, 51) of the base part (47) and cooperating with the clamping lever (53) via a thread, wherein a turntable arrangement (37) rotatably supported at the upper U limb (49) of the base part (47) about an axis extending perpendicular to the
- 15 first cutting plane (25) and having the slot (19) defining the second cutting plane (27) capable of being fixed by a rotational actuation of the clamping spindle (45) and simultaneously the clamping lever (53) being pivotable relative to the base part (47) into clamping engagement with the base element (15).
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16. An apparatus in accordance with claim 15, characterized in that a free end region of the clamping spindle (45) is made for the fixing of the turntable arrangement (37) and can be brought into clamping engagement with an outer rim region of the turntable arrangement
- 25 (37) by the rotational actuation of the clamping spindle (45).
17. An apparatus in accordance with claim 15, characterized in that the clamping lever (53) includes an actuation arm (55) and a clamping

arm (57), with the clamping spindle (45) cooperating with the actuating arm (55) and the clamping arm (57) being pivotable, for the clamping tight of the base element (15) located between the two U limbs (49, 51) of the base part (47), by rotational actuation of the clamping spindle (45) via the actuating arm (55) into the region between the two U limbs (49, 51) and toward the base element (15).

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18. An apparatus in accordance with claim 15, characterized in that cooperating threaded sections of the clamping spindle (45) and of the clamping lever (53) are held free of clearance by a spring (61) clamped between a contact section (59) fixed with respect to the spindle and the actuation arm (55) of the clamping lever (53).

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19. An apparatus in accordance with claim 15, characterized in that the intermediate space between the two U limbs (49, 51) of the base part (47) is matched to the height of the base element (15) and is designed for a base element (15) with a height of approximately 12 mm.

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